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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/451,289	11/30/1999	YOICHI YAMAGISHI	1232-4602	8836
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MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER HANNETT, JAMES M	
			ART UNIT 2612	PAPER NUMBER

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/451,289

Applicant(s)

YAMAGISHI, YOICHI

Examiner

James M Hannett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 9/20/2004 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a signal processing device configured to perform each first image sensing operation along with a corresponding second image sensing operation) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicant further states that Bakhle does not teach any capability of performing the second image sensing operation for the plurality times of image sensing operations in accordance with the selected image sensing time for the first image sensing operation.

The examiner views this limitation to be convoluted and is viewed by the examiner to read as follows; The camera selects one of the exposures of the multiple frames of captured images and performs one dark image capture operation for all of the frames of captured images in accordance with the exposure time of the one selected exposure and processes the video frames captured at different times by the one captured dark image. Bakhle et al teaches this limitation on Column 5, Lines 42-54. Bakhle et al teaches if all images captured at different times have the same exposure and environmental conditions, the images are processed using the same captured dark image.

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The applicant argues that Bakhle does not teach the processing circuitry “inhibiting” the acquisition of dark image. The applicant argues that Bakhle is silent as to any capability of the signal processing device to inhibit the second image sensing operation from being made for each image sensing operation in response to the instruction of the instruction device.

The Examiner disagrees with the applicant. Bakhle teaches on Column 5, Lines 42-54 the use of a camera that uses a cache of dark images and therefore eliminates the requirement of frequently obtaining a new dark image for every captured image. Instead, it requires that a dark image be captured only when the exposure parameters or environmental conditions change significantly and a corresponding dark image is not located in the dark image cache. Therefore, it is viewed by the examiner that the process of preventing a dark image from being captured unless the system determines that the exposure parameters or environmental conditions have changed significantly and there is no corresponding dark image located in the cache. Therefore, the signal processing device (camera) inhibits (prevents) dark images from being captures for every image sensing operation in response to the instruction of the instruction device.

Claim Objections

Claims 3 and 4 are objected to because of the following informalities: Claim 3 is dependent on canceled claim 2. Appropriate correction is required. For examination purposes the examiner has assumed that Claim 3 depends from amended Claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1: Claims 1, 3-24 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN

6,061,092 Bakhle et al.

2: As for Claim 1, Bakhle et al teaches an apparatus comprising:

(A) an image sensing device (36); (B) a signal processing device (42) for performing a first image sensing operation for making said image sensing device (36) perform an image sensing operation in an exposure state to obtain a sensed image signal; Column 4, Lines 1-25

This is viewed by the examiner as taking a picture with the camera with the shutter open.

Performing a second image sensing operation for making said image sensing device perform an image sensing operation in accordance with said first image sensing operation in a non-exposure state to obtain a sensed image signal; Column 5, Lines 23-26 and Column 1, Lines 41-45. Bakhle et al teaches that dark images are captured using the same exposure parameters as the captured image. These dark images are captured by obtaining an image when the shutter is closed. Bakhle et al teaches processing the sensed image signal obtained by the first image sensing operation by the sensed image signal obtained by the second image sensing operation, wherein said signal processing device changes method of the second image sensing operation to the first image sensing operation in response to the instruction of said instruction device; Column 4, Lines 1-25.

This is viewed by the examiner as the subtraction process of subtracting the dark image pixel values from the sensed image pixel values. (C) an instruction device for instructing to execute a predetermined plurality times of image sensing operations with different image sensing times of

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said first image sensing operation; Column 3, Lines 54-57 teaches that the camera captures several dark images that have different exposure parameters. Column 1, Lines 41-43 teaches that the dark images are captured using the same exposure parameters as the scene image. Column 4, Lines 45-48 teaches that a dark image is used until the video camera operating characteristics change enough to require a new dark image. This is viewed by the examiner as a video camera taking a plurality of pictures and subtracting the noise from all the frames in a video stream using one dark image and changing the dark image used when the operating parameters including the exposure time are changed. The examiner views the first image sensing operation as being an operation in which the camera takes an image with the shutter open. The examiner views the second image sensing operation as the operation to capture a dark image. Bakhle teaches these two image capture methods on Column 3, Lines 54-56 and Column 4, lines 9-14. Bakhle teaches on Column 6, Lines 21-65 that when a dark image is being captured during camera operation, the image is being captured because there is no reference dark image that corresponds the current video images being captured by the camera. After the dark reference image is captured, the processing circuitry of the camera opens the shutter and captures the next video frame. This is viewed by the examiner as a capability of changing a second image sensing operation to a first image sensing operation. This change is performed in response to an instruction to open the shutter sent from the instruction device which is viewed by the examiner as the control circuitry for the shutter.

As for the limitation; the signal processing device (camera) selects an image sensing time (one exposure) of said different image sensing times (multiple frames of images) of said first image sensing operations (image capture) executed the plurality times of image sensing

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operations (video frames) in response to the instruction of said instruction device (circuitry that oversees the operation of the camera functions), and performs said second image sensing operation (dark image capture) for the plurality times of image sensing operations (all the video frames) in accordance with the selected image sensing time (one exposure), and further processes the plurality of sensed image signal (video frames) obtained with said different image sensing times (different times at which the frames are captured) by the sensed image signal obtained by the second image sensing operation (dark image).

This limitation is convoluted and is viewed by the examiner to read as follows; The camera selects one of the exposures of the multiple frames of captured images and performs one dark image capture operation for all of the frames of captured images in accordance with the exposure time of the one selected exposure and processes the video frames captured at different times by the one captured dark image. Bakhle et al teaches this limitation on Column 5, Lines 42-54. Bakhle et al teaches if all images captured at different times have the same exposure and environmental conditions, the images are processed using the same captured dark image.

3: As for Claim 3, Bakhle et al teaches on Column 7, Lines 14-18 A storage device for storing the sensed image signal of the second image sensing operation (Dark image) according to the selected image sensing time.

4: In Regards to Claim 4, Bakhle et al teaches on Column 4, Lines 63-67 and Column 5, Lines 1-22 wherein said signal processing device (42) processes the sensed image signal obtained by the first image sensing operation on the basis of the sensed image signal stored in said storage device in image sensing operations other than the predetermined one of the plurality times of image sensing operations.

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5: As for Claim 5, Bakhle et al teaches on Column 1, Lines 41-46 and Column 6, Lines 13-16 wherein said signal processing device (42) selects a longest image sensing time (exposure time) of the first image sensing operation of the plurality times of image sensing operations in response to the instruction of said instruction device, and makes the second image sensing operation for the plurality times of image sensing operations in accordance with the selected image sensing time. Bakhle et al teaches that the camera can capture images with a plurality of exposure settings. Bakhle et al further teaches that the dark images that are subtracted from the acquired image signal are captured using the same exposure conditions. Therefore, it is inherent that the longest exposure time setting will have the same exposure characteristics for both the captured image and captured dark image.

6: In Regards to Claim 6, Bakhle et al teaches on Column 7, Lines 14-18 A storage device for storing the sensed image signal of the second image sensing operation (dark image) according to the selected image sensing time.

7: As for Claim 7, Bakhle et al teaches on Column 4, Lines 63-67 and Column 5, Lines 1-22 wherein said signal processing device (42) processes the sensed image signal obtained by the first image sensing operation (obtained sensed image) on the basis of the sensed image signal stored in said storage device (dark image) in image sensing operations other than the longest image sensing time of the first image sensing operation of the plurality times of image sensing operations. Bakhle et al teaches that the obtained image signal is subtracted from a dark image that has the same corresponding exposure parameters. Bakhle et al teaches that the dark images are captured in exposures performed after an image is captured or at an initial setup and not during an actual exposure operation to capture an image.

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8: In Regards to Claim 8, Bakhle et al teaches on Column 1, Lines 41-46 and Column 6, Liens 13-16 wherein said signal processing device designates an image sensing time of the first image sensing operation of a predetermined image sensing operation in response to the instruction of said instruction device, and makes the second image sensing operation for the plurality times of image sensing operations in accordance with the designated image sensing time. Bakhle et al teaches that the camera can capture images with a plurality of exposure settings. Bakhle et al further teaches that the dark images that are subtracted from the acquired image signal are captured using the same exposure conditions.

9: As for Claim 9, Bakhle et al teaches on Column 7, Lines 14-18 A storage device for storing the sensed image signal of the second image sensing operation (dark image) according to the selected image sensing time.

10: In Regards to Claim 10, Bakhle et al teaches on Column 4, Lines 63-67 and Column 5, Lines 1-22 wherein said signal processing device (42) processes the sensed image signal obtained by the first image sensing operation on the basis of the sensed image signal stored in said storage device in image sensing operations other than the predetermined one of the plurality of image sensing operations (dark image).

11: As for Claim 11, Bakhle et al teaches on Column 7, Lines 14-18 wherein said apparatus includes a camera.

12: In Regards to Claim 12, Bakhle et al an apparatus comprising:

(A) an image sensing device (36);(B) a signal processing device (42) for performing a first image sensing operation for making said image sensing device (36) perform an image sensing operation in an exposure state to obtain a sensed image signal; Column 4, Lines 1-25

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This is viewed by the examiner as taking a picture with the camera with the shutter open.

Performing a second image sensing operation for making said image sensing device perform an image sensing operation in accordance with said first image sensing operation in a non-exposure state to obtain a sensed image signal; Column 5, Lines 23-26 and Column 1, Lines 41-45. Bakhle et al teaches that dark images are captured using the same exposure parameters as the captured image. These dark images are captured by obtaining an image when the shutter is closed. Bakhle et al teaches processing the sensed image signal obtained by the first image sensing operation by the sensed image signal obtained by the second image sensing operation, wherein said signal processing device inhibiting the second image sensing operation from being made for each image sensing operation in response to the instruction of said instruction device; Column 4, Lines 1-25. This is viewed by the examiner as the subtraction process of subtracting the dark image pixel values from the sensed image pixel values. (C) an instruction device for instructing to execute a predetermined plurality times of image sensing operations with different image sensing times of said first image sensing operation; Column 3, Lines 54-57 teaches that the camera captures several dark images that have different exposure parameters. Column 1, Lines 41-43 teaches that the dark images are captured using the same exposure parameters as the scene image. Column 4, Lines 45-48 teaches that a dark image is used until the video camera operating characteristics change enough to require a new dark image. This is viewed by the examiner as a video camera taking a plurality of pictures and subtracting the noise from all the frames in a video stream using one dark image and changing the dark image used when the operating parameters including the exposure time are changed. The examiner views the first image sensing operation as being an operation in which the camera takes an image with the shutter open. The

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examiner views the second image sensing operation as the operation to capture a dark image.

Bakhle teaches these two image capture methods on Column 3, Lines 54-56 and Column 4, lines 9-14. Bakhle teaches on Column 6, Lines 21-65 that when a dark image is being captured during camera operation, the image is being captured because there is no reference dark image that corresponds the current video images being captured by the camera. After the dark reference image is captured, the processing circuitry of the camera opens the shutter and captures the next video frame. This is viewed by the examiner as a capability of changing a second image sensing operation to a first image sensing operation. This change is performed in response to an instruction to open the shutter sent from the instruction device which is viewed by the examiner as the control circuitry for the shutter.

13: As for Claim 13, Bakhle et al teaches on Column 1, Lines 41-46 and Column 6, Lines 13-16 wherein said signal processing device (42) selects an image sensing time of the first sensing operation of a predetermined one of the plurality times of image sensing operations in response to the instruction of said instruction device, and makes the second image sensing operation for the plurality times of image sensing operations in accordance with the selected image sensing time. Bakhle et al teaches that the camera can capture images with a plurality of exposure settings. Bakhle et al further teaches that the dark images that are subtracted from the acquired image signal are captured using the same exposure conditions.

14: In Regards to Claim 14, Bakhle et al teaches on Column 7, Lines 14-18 A storage device for storing the sensed image signal of the second image sensing operation (Dark image) according to the selected image sensing time.

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15: As for Claim 15, Bakhle et al teaches on Column 4, Lines 63-67 and Column 5, Lines 1-22 wherein said signal processing device (42) processes the sensed image signal obtained by the first image sensing operation on the basis of the sensed image signal stored in said storage device in image sensing operations other than the predetermined one of the plurality times of image sensing operations.

16: In Regards to Claim 16, Bakhle et al teaches on Column 1, Lines 41-46 and Column 6, Lines 13-16 wherein said signal processing device (42) selects a longest image sensing time (exposure time) of the first image sensing operation of the plurality times of image sensing operations in response to the instruction of said instruction device, and makes the second image sensing operation for the plurality times of image sensing operations in accordance with the selected image sensing time. Bakhle et al teaches that the camera can capture images with a plurality of exposure settings. Bakhle et al further teaches that the dark images that are subtracted from the acquired image signal are captured using the same exposure conditions. Therefore, it is inherent that the longest exposure time setting will have the same exposure characteristics for both the captured image and captured dark image.

17: As for Claim 17, Bakhle et al teaches on Column 7, Lines 14-18 A storage device for storing the sensed image signal of the second image sensing operation (dark image) according to the selected image sensing time.

18: In Regards to Claim 18, Bakhle et al teaches on Column 4, Lines 63-67 and Column 5, Lines 1-22 wherein said signal processing device (42) processes the sensed image signal obtained by the first image sensing operation (obtained sensed image) on the basis of the sensed image signal stored in said storage device (dark image) in image sensing operations other than

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the longest image sensing time of the first image sensing operation of the plurality times of image sensing operations. Bakhle et al teaches that the obtained image signal is subtracted from a dark image that has the same corresponding exposure parameters. Bakhle et al teaches that the dark images are captured in exposures performed after an image is captured or at an initial setup and not during an actual exposure operation to capture an image.

19: As for Claim 19, Bakhle et al teaches on Column 1, Lines 41-46 and Column 6, Lines 13-16 wherein said signal processing device designates an image sensing time of the first image sensing operation of a predetermined image sensing operation in response to the instruction of said instruction device, and makes the second image sensing operation for the plurality times of image sensing operations in accordance with the designated image sensing time. Bakhle et al teaches that the camera can capture images with a plurality of exposure settings. Bakhle et al further teaches that the dark images that are subtracted from the acquired image signal are captured using the same exposure conditions.

20: In Regards to Claim 20, Bakhle et al teaches on Column 7, Lines 14-18 A storage device for storing the sensed image signal of the second image sensing operation (dark image) according to the selected image sensing time.

21: As for Claim 21, Bakhle et al teaches on Column 4, Lines 63-67 and Column 5, Lines 1-22 wherein said signal processing device (42) processes the sensed image signal obtained by the first image sensing operation on the basis of the sensed image signal stored in said storage device in image sensing operations other than the predetermined one of the plurality of image sensing operations (dark image).

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22: In Regards to Claim 22, Bakhle et al teaches on Column 7, Lines 14-18 wherein said apparatus includes a camera.

23: As for Claim 23, Bakhle teaches on Column 6, Lines 21-65 that when a dark image is being captured during camera operation, the image is being captured because there is no reference dark image that corresponds the current video images being captured by the camera. After the dark reference image is captured, the processing circuitry of the camera opens the shutter and captures the next video frame. This is viewed by the examiner as a capability of changing a second image sensing operation to a first image sensing operation. This change is performed in response to an instruction to open the shutter sent from the instruction device which is viewed by the examiner as the control circuitry for the shutter. The instruction command opens the shutter for a predetermined amount of time to capture the next video frame. The particular operation mode from a plurality of first operation modes is viewed by the examiner as the exposure setting of the camera. The exposure setting stays the same over a series of video frames.

24: In regards to Claim 24, Bakhle teaches on Column 6, Lines 21-65 that when a dark image is being captured during camera operation, the image is being captured because there is no reference dark image that corresponds the current video images being captured by the camera. After the dark reference image is captured, the processing circuitry of the camera opens the shutter and captures the next video frame. This is viewed by the examiner as a capability of changing a second image sensing operation to a first image sensing operation. This change is performed in response to an instruction to open the shutter sent from the instruction device which is viewed by the examiner as the control circuitry for the shutter. The instruction command opens

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the shutter for a predetermined amount of time to capture the next video frame. The particular operation mode from a plurality of first operation modes is viewed by the examiner as the exposure setting of the camera. The exposure setting stays the same over a series of video frames.

Conclusion

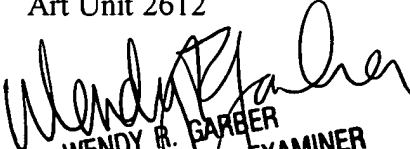
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M Hannett whose telephone number is 703-305-7880. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH
January 10, 2005

James M. Hannett
Examiner
Art Unit 2612


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600